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Hyperfine Interaction Estimation of Nitrogen Vacancy Center in Diamond YUTAKA SHIKANO, Dept. Physics, Tokyo Tech and Dept. Meche., MIT, SHU TANAKA, Kinki University — A nitrogen vacancy center, NV center, in diamond is studied as a promising candidate for a qubit in quantum information technology, especially as quantum storage devices, since the electron spin can be optically initialized, read out and transferred its quantum information to the C^{13} nuclear spin by the hyperfine interaction. However, it is difficult to evaluate the hyperfine interaction when we do not know the relative position of the C^{13} nuclear spin. We theoretically propose a new experimental protocol using the weak measurement technique without knowing the relative position of the nuclear spin. In this presentation, we will present its advantage and the extension to the quantum media conversion systems.

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